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ABSTRACT

In a given urban area it is common that different public agencies and offices attempt to gather diverse data with no mutual coordination or awareness of each others' activities. This picture of varied and uncoordinated data needs reflects a lack of established information relationships and the need for an urban information system. In this study an operational urban information system instituted in the Wichita, Kansas area, is described. This system is called the Wichita-Sedgwick County Intergovernmental Enumeration (WSCIE) and is maintained by the Interagency Research Committee (IRC). The history and structural functions of the data system and the role of IRC are outlined. The scope of data collected and the actual process of WSCIE collection are described in detail. The problem of confidentiality of data which is accessible to the public sector is discussed, and experiences IRC has had in this regard are cited. Throughout, there is a concern with the political issues and conflicts that can and do arise when such a system is implemented on a local government level. It is concluded, however, that both the IRC and WSCIE serve an integrating function for research activities in the Wichita area. Benefits of the program and implications for wider use in the future are outlined. (GC)

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URBAN AFFAIRS PAPER NO. 1

AN OPERATIONAL URBAN INFORMATION SYSTEM

by

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and

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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It is not difficult to imagine an urban area in which, simultaneously or individually, different divisions of a metropolitan planning department are attempting to gather data to meet advanced physical and social planning needs; a metropolitan health department is seeking basic data on animal control and solid-waste disposal; the state employment division's local office is preparing to ascertain the number of employable Vietnam veterans; and a local board of education is planning to gather data for projecting future enrollments and building needs. In reality, each agency probably would attempt to gather its data by whatever means possible and without being aware of the other agencies' activities. Such agencies may attempt to engage in individual research projects, hire consultants, or make "educated" guesses. Or, the agencies may utilize U.S. Census or other data if available and appropriate to the research task--but which may be dated. Although the scenario is imaginary, it is probably not an inaccurate view of conditions in many urban areas in the United States.[1]

This picture of varied and uncoordinated data needs reflects a lack of established information relationships and the need for an urban information system. A system would consist, as Kraemer indicates, "of people, computer equipment and related programs, a dynamic data base, and institutional procedures in a prescribed systems pattern."[2] While there is an extensive literature on many aspects of urban information systems as defined by Kraemer, there is a paucity of materials which describe an operational system.[3] The examination of a particular operational system will not provide the basis for re-casting theory, but it may reveal problems, concerns and issues in a context of interest to theoreticians and practitioners alike.

This study attempts to describe an operational urban information system with one intentional exclusion: it does not examine the system's computer equipment and related programs.[4] The reason

for this exclusion is lack of space. For example, each of the four principal users of the data, as discussed in this paper, have different computer hardware and tend to use differing software. Ideally, all data users should be on the same system but the political realities of the area are such that this efficiency is not immediately possible.

Background

Wichita-Sedgwick County (Kansas) is a 999 square-mile urban area of 342,403 persons, of whom 76 percent reside in the city of Wichita. Slightly more than 12 percent of the population are minority group members. The average educational level in the area is nearly 13 years (slightly higher than the state average of about 12.5 years). As is the case in most urban areas, there is a plethora of federal, state, regional, county, township, city, and special district agencies--more than three hundred. With the exceptions of the cities and the school districts, officials are elected on a partisan basis in this aircraft and light manufacturing/agribusiness area.[5] Unlike government agencies in many urban areas, these agencies have an urban information system which fulfills major data needs. The system is called the Wichita-Sedgwick County Intergovernmental Enumeration (WSCIE) and is maintained by the Interagency Research Committee (IRC).

> The IRC is a voluntary, unfunded organization which provides,
>
> . . . a framework for coordinating an effective Community research and information program which would better support the individual research efforts of the members and the organization represented.[6]

While the IRC is unbudgeted, it is indirectly supported by in-kind contributions on the part of the participating agencies. This support is mostly in the form of personnel time by employees of the city of Wichita, county of Sedgwick, Unified School District 259, and Wichita State University. For example, the support services (agendas, minutes and mailings) necessary for the operation of the IRC were provided by the Center for Urban Studies of Wichita State University until recently. These services are now provided by the Wichita-Sedgwick County Metropolitan Area Planning Depart-

ment. There are no staff members directly assigned to the IRC. The activities of the organization include the identification of IRC data needs, collection of data, cooperative data analysis and interpretation, and the publication of evaluative information.[7] The activities are an outgrowth of two basic needs: (1) the integration of research efforts by participating agencies, and (2) the generation of local data essential to making policy decisions.[8]

At the initial organizational meeting of the IRC in 1971, 12 public and quasi-public agencies were represented. Today there are 30 public and quasi-public institutional (voting) members, including the original 12, and an additional 33 individual (non-voting) members representing a variety of research interests. Part of the growth of the IRC may be due to the opportunities it makes available to its members. Monthly luncheon meetings provide the occasion for handling regular agency business, informal discussions, lectures and research reports by members and non-members. For example, two recent meetings dealt with "National Population Trends" and "Migration Patterns in Wichita-Sedgwick County." The applied nature of the IRC meetings reflects individual as well as agency interests.

Organizationally, the IRC provides the basis for establishing formal research relationships, increases the flow and content of inter- and intra-agency communications, and serves as a device for informal cooperation and assistance in intra-agency research activities. In terms of personnel development, the IRC enables individuals with similar interests to exchange views in a non-threatening context--opportunities which may not exist in individual agencies. Perhaps the major reason for the growth of the IRC is its principal activity: the continued development and maintenance of the WSCIE system.

Concurrent with the creation of the IRC, the first WSCIE took place in 1971. Kansas law (K.S.A. 11-101 *et seq.*) requires each county assessor, or clerk in the absence of an assessor, to provide the state with an annual enumeration of county residents by name/address/age. In addition, a Sedgwick County health ordinance

requires an annual dog census. In 1969 a few area agencies attempted to gather minimal socioeconomic data in conjunction with the legally required data. This experience appears to have provided the impetus for the creation and development of both the IRC and WSCIE.[9] Since the state-required enumeration is fulfilled in the other 104 Kansas counties without a system such as WSCIE or an organization similar to the IRC, the existence of the WSCIE or the IRC cannot be simply attributed to the legal requirements. The legal requirements, however, perform two very important roles: (1) since there is a great deal of political sensitivity to duplicated costs, the requirements provide additional justification for WSCIE; and (2) the requirements lend symbolic legitimacy to the gathering of additional data.[10]

As Figure I indicates, WSCIE annually collects a variety of data on a house-to-house basis. To maximize the effectiveness and efficiency of WSCIE, three categories of data have been established by the IRC: annual, cyclical, and one-time. Annual data include the legally required information and items such as race, sex, income, education, and migration. Cyclical data include items such as refuse collection and fixed income, which require less frequent yet regular monitoring. One-time data items reflect the specialized needs of a major data user or project. In 1973, for instance, the Wichita-Sedgwick County Metropolitan Area Planning Department required detailed data on transportation modes in order to develop a comprehensive transportation plan. The 1973 WSCIE provided data on the number of bicycles, motorcycles, cars, and trucks in the county by household. The data also assisted the user in developing a city-wide bicycle-path system. Usually there is space on the WSCIE form for two or three cyclical items and one or two one-time items. Due to limitations imposed by cost and personnel considerations, the WSCIE form is restricted to one page, both sides. Largely due to the data classification system, however, WSCIE fulfills its users's major cross-sectional and longitudinal data needs.

An evaluation of the usefulness of WSCIE data is possible using Hanel's criteria of suitability, sufficiency, and small-area

I. Housing Unit Information
   a. Same Family (in the housing unit)
   b. Change in Personal Information, Same Family
   c. New Family (at the address)
   d. Vacant
   e. Deletion (housing unit)
   f. Household Identification Number

II. Small Area Identification:
   a. Township
   b. City
   c. Ward
   d. Precinct
   e. Tract
   f. Block
   g. School District
   h. House Number
   i. Direction
   j. Street Name
   k. Type
   l. 2nd Direction
   m. Unit Number (multi-units)

III. Personal Information
   a. Name
   b. Age
   c. Sex
   d. Race
   e. Relationship to Head of Household (five categories)
   f. Education (ten categories)
   g. Employment Status (eight categories)
   h. Interviewee

IV. Type of Structure (seven categories)
V. Exterior Building Condition (ten categories)
VI. Number of Bedrooms
VII. Sewage Disposal (five categories)
VIII. Animal Census (six categories)
IX. Estimated Value of Home (seven categories)
X. Amount of Rent (seven categories)
XI. Fixed Income Status (by type, five categories)
XII. Household Income (eleven categories)
XIII. Migration
   a. Last Address (complete)
   b. Owner or Renter
   c. Urban or Rural
   d. Military or Non-Military Move

Figure I. WSCIE Information Items

Source: 1974 WSCIE Form

identification.[11] Data suitability is ascertained by the ratio of use to cost. Assuming that only two of the area agencies required different data on the same base, the individual project costs could easily exceed the current cost of WSCIE. Since different data on the same population are separately required by the State and the County, WSCIE data appears suitable; moreover, any additional usage of the WSCIE data by other agencies substantially increases its suitability. As Figure II illustrates, the WSCIE data are used for a variety of tasks. In addition to the data uses presented in Figure II, one city agency has, for example, developed two social indicators for the local area based on factor analyses of WSCIE data, while another agency utilized WSCIE data as a basis for evaluating rabies prevention models.[12] From the data of Figure II, it is evident that if WSCIE did not exist, area agencies would probably fit the earlier hypothetical scenario. Instead, WSCIE serves to minimize unnecessary duplication of research and data gathering efforts within and across organizational entities. In addition to this oblique integration, WSCIE provides a basis for horizontal, vertical and diagonal urban integrative purposes.[13]

In many urban areas it is not uncommon for a number of public, quasi-public and private agencies to be providing services to the same clients. The achievement of horizontal integration (*i.e.*, minimize the duplication of effort across disparate agencies in order to maximize the delivery of benefits to the clients) would have obvious value to an area. For example, a number of different agencies may provide or seek to provide services to the elderly. In the Wichita area, such agencies have a common data source on the elderly to locate and make preliminary need assessments of potential clients. As a consequence, senior citizens in the area are now receiving congregate meals and related services from a variety of agencies at client-convenient sites. The WSCIE data contributed substantially to the development and selection of both services and sites.

The WSCIE data facilitate vertical integration by minimizing, for example, the potential for conflict which exists when different

School Enrollment Projections (by grade level)
School District and Attendance Area Descriptions by Demographic and Social Characteristics
Assessing Changes in Demographic and other Socioeconomic Characteristics in Neighborhoods
Special Studies (*e.g.*, impact of proposed housing developments on School enrollments)
Projection of Housing Growth and Needs
Estimating Funding Needs for Housing Assistance Projections
Statistical Reports on Housing Conditions
Grant Submissions
Public Information
Monitoring Demographic Changes
Measuring Dwelling Unit Turnover
Environmental Impact Studies
Annexation Studies
Open Space Demand Studies
Land Use Plan/Forecast
Population Forecasting
Housing Development Impact Studies
Program Evaluations
Business Location Studies
Problem Identification and Need Determination
Goal Setting and Affirmative Action Programs
Sampling Improvements
Animal Maintenance Information
Refuse Collection Information
Eligibility Information
Relocation Planning for Clearance Areas
Determining Eligibility for Rehabilitation Loans and Grants
Neighborhood Development Program Applications
Industrial and Commercial Development
Project Reviews
Long Range Health Planning
Comprehensive Health Plan
Aged Services Planning
Day Care Planning
Determining Manpower Needs
County Reapportionment
Jury Lists
Senior Citizens Programs
Training Programs
Economic Base Studies
Migration Studies
Demographic Studies
Classroom Use (Aggregate Data)

Figure II. WSCIE Data Use, 1973

Source: Correspondence of IRC Chairman, Mr. Willard L. Stockwell to Mr. Ralph Wulz, City Manager of Wichita, April 4, 1974. (IRC Secretariat Files, Center for Urban Studies, Wichita State University.)

data sources are used. The city of Wichita utilized the WSCIE data, for instance, in establishing its Citizen Participation Organization, a city-wide organization with elected neighborhood representatives. Diagonal integration (*i.e.*, serving as a basis for the provision of many services by agencies within an organization) is illustrated by Wichita's use of the WSCIE data in creating its multi-purpose neighborhood service centers.

The cost of WSCIE is $100,000 with funding jointly provided by Sedgwick County ($20,000), the City of Wichita ($20,000), Unified School District No. 259 ($10,000), and the Sedgwick County Assessor's Office ($50,000). Of the $100,000 total, 65 percent is expended for field work and 35 percent for other contractual services. In addition, IRC members provide in-kind services to assure the success of WSCIE.

Since each enumeration question (except name, age and address) is evaluated annually in terms of its need and contribution to assessing the problems of the community, Hanel's second criterion of sufficiency appears satisfied in WSCIE. Moreover, since WSCIE data is address-based it can be linked through ADMATCH to U.S. Census files, REIS (Real Estate Information System) files, and Employment Information System files, and is obviously a data base with small-area identification capabilities which may be aggregated to any level. All of the preceding data systems are institutionally maintained by the Wichita-Sedgwick County Metropolitan Area Planning Department (WSCMAPD). WSCIE data may be publicly released in printed form but these data summaries are aggregated by precincts, wards, census tracts, cities and townships. In no case are WSCIE data publicly released in aggregations of less than a precinct or census tract with a small-area criterion of not less than four units or a census block.

WSCIE Process

The preceding description of the IRC and WSCIE provides the foundation for presenting another aspect of an operational urban information system: its data collection process. While the process is dynamic, it can be presented in a time and significant

activities framework. The significant activities which occur in WSCIE's annual cycle, July through June, are presented in Figure III.

Each July all members of the IRC are surveyed by the IRC's Secretariat (the Center for Urban Studies at Wichita State University) as to their data needs for the forthcoming year. This survey input provides the basis for modifications in the forthcoming year's WSCIE. In addition to evaluating the "annual data" types of information, the survey elicits new data items. Members requesting new data are asked to specify the data sought and the question(s) format which will elicit that data, and justify the data need. If a member seeks more than one type of new data, the requests must be rank-ordered. The survey results are collated and analyzed by the IRC's Data Committee. Since space on the WSCIE form is limited and IRC members tend to favor longitudinal data, new data items are subject to considerable scrutiny and investigation by the Data Committee. Often members must make more detailed presentations on proposed items before the Data Committee.

In WSCIE's four-year history, relatively few data requests have been rejected. Most of the refusals were due to technical considerations. For example, the Wichita-Sedgwick County Health Department sought immunization data on all children in the area. The request was rejected because of the complexity of the data (each type of immunization of each child in each household) and anticipated collection problems. On occasion, new data requests may be met by modifying existing items if it does not destroy longitudinality. The evaluative aspect of the WSCIE process appears to have created sufficient data, increased the research sophistication of many WSCIE participants, reduced the number of interesting but rather trivial data requests, increased the quality of WSCIE generally, and created a sense of "ownership" in WSCIE on the part of its participants.

By late August or early September, the Data Committee develops drafts of the questionnaire protocol and enumeration form in cooperation with other IRC members. These drafts are submitted to the

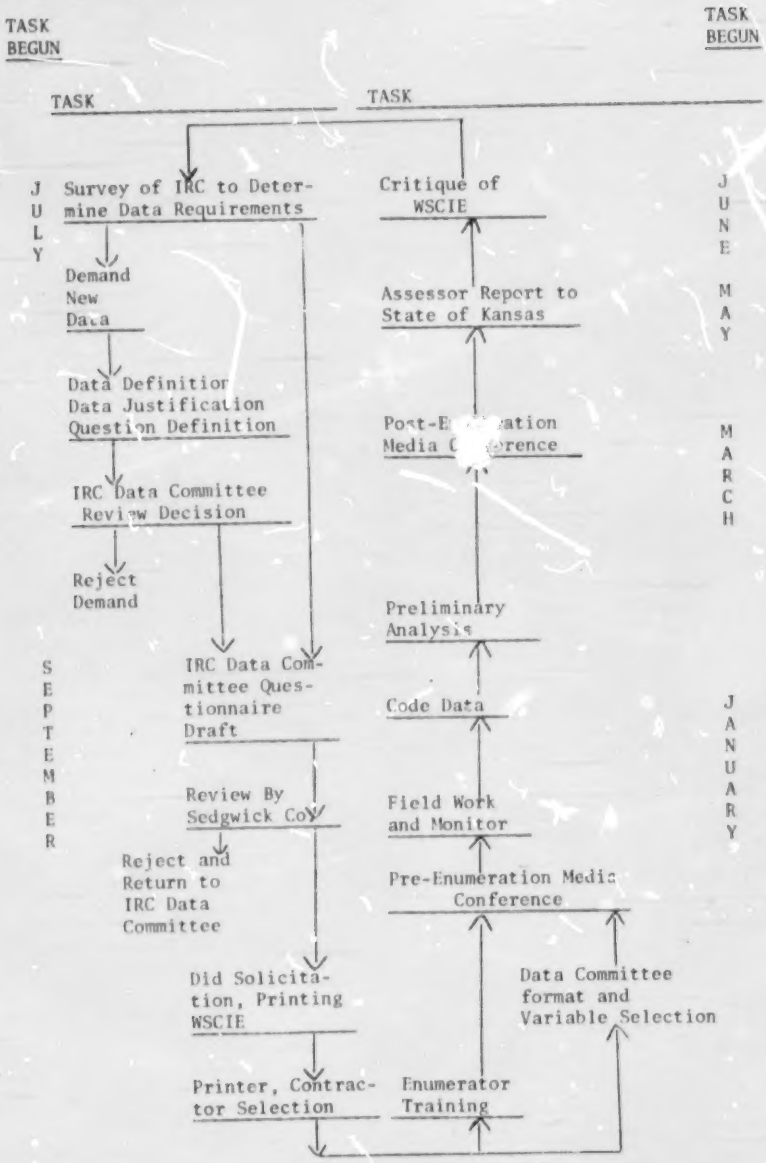

Figure III WSCIE Flowchart

IRC representatives of Sedgwick County, the city of Wichita, Unified School District No. 259 (U.S.D. 259), and the Sedgwick County Assessor for approval. After the drafts are approved, Sedgwick County puts up for separate public bids the printing of the materials and WSCIE. The selected WSCIE contractor is responsible for field work, coding, and tabulation. Although there have been different printing contractors over the years, the WSCIE contract has remained with the same firm. Other firms have occasionally bid on the contract without success and this appears to result from the superior performance record of the WSCIE contractor. The Data Committee determines the tabulation formats for the data and the publicly released aggregates.

Enumerators for WSCIE are selected by the Sedgwick County Assessor and trained by the WSCIE contractor with the assistance of IRC members. This training, which is held in January, covers the goals and purposes of WSCIE, use of WSCIE field forms, typical field problems, call-backs and other WSCIE procedures. Although there is some turnover from year to year among the enumerators, there is now a cadre of experienced enumerators. In addition, training techniques have improved. As a result, problems which normally occur when there is inadequate control over the selection and retention of interviewers have been reduced.

The selection and retention of enumerators is under the control of an elected county assessor who is more sensitive to the bases of his political support than standard criteria for selecting and retaining enumerators. As a result, the interviewers tend to be unemployed females in their late forties or early fifties who are selected and retained on a basis other than the standards normally associated with professional interviewing. Since a portion of the enumeration costs is borne by the Assessor's budget, there is a serious constraint on forcing the issue. The budget allocation for enumerators is based on the minimum hourly wage permitted by law. Enumerators are expected to complete four household interviews per hour, but if an enumerator completes 32 households in six hours, he or she is paid for eight hours

work. This incentive enables most enumerators to earn more than the minimum hourly wage while assuring an enumeration within the budget. In addition, enumerators who do exceptional work are given the opportunity to do additional enumerations. All factors considered, most experienced enumerators appear to be functioning at a high level of effectiveness.

Upon completion of the enumeration training, the Sedgwick County Assessor holds a pre-enumeration media conference. Representatives of the city of Wichita, Unified School District No. 259, Sedgwick County, and the IRC also participate in this event. The media conference deals with the forthcoming enumeration, its importance to local government and citizens, and the identification of enumerators. Judging by the fewer field problems occurring each year, this public information technique is successful.

The field work begins immediately after the media conference. Each enumerator is assigned a precinct (not her or his own) in those areas with precincts; township trustees serve as enumerators in the rural--non-precinct--areas. The quality and quantity of the field work is controlled by the contractor with the assistance of monitors. The monitors, provided by IRC members, supervise a relatively small number (10 to 15) of enumerators. The monitors' duties include the checking and verification of the completed enumerations and ensuring that deadlines are met.

Since enumerators must turn in their work each week, codification of the data can begin one week after the start of the field work. On a sample basis, re-verification of the data is undertaken throughout the codification process by the contractor. As a result of the double-check system (monitor and contractor), potentially costly field problems may be quickly rectified. Over the years, a number of cost-saving devices have been developed which have kept the WSCIE cost at its original level. Since 1973, for example, each household's form has been pre-printed with the appropriate names/address/sexes/ages automatically updated one year. This results in an overall reduction in enumeration and key punch costs.

Preliminary analysis of the data begins during March, and serves as an additional comparative evaluation tool. This analysis is controlled by the Data Committee, and in January it selects the format and variables of the printed tabulations based on an evaluation of previous efforts. The summary tabulations from this analysis are available to IRC members and the public for inspection and use. Copies are provided by the contractor to each of the funding agencies and the Secretariat of the IRC for public use.

A formal press conference is held when the data tabulations are completed. This conference serves to inform the public of the general results of WSCIE and to denote changes in the urban area. For example, in 1973, many local observers, including some IRC members and a number of elected officials, expected the area would show a substantial population increase, reflecting new industries and a booming local economy. However, the data did not support this "hypothesis"; instead, it revealed a small influx of families with three or fewer persons in the household. Most of the families were young apartment dwellers, which also accounted for a paradox--an apartment shortage continued to exist, despite a substantial increase in the number of apartment complexes in the area. Moreover, the data appeared to indicate an increase in the number of persons in each household who were working full time; this was supported later by other data. Over the years, media interest in WSCIE has grown, in part because of the demonstrated value of the data in questioning common sense assertions; that is, the data are "newsworthy." Both media conferences serve to inform the public and, to some extent, assure the effectiveness of WSCIE.

Under Kansas law, the Assessor must report the required enumeration data by May 1 of each year. Once verified by the state, the required data are official and public. This point is discussed below. Normally, a critique of WSCIE is undertaken by the participants in June of each year. This critique serves as a basis for the beginning of the new cycle and, hopefully, an improved WSCIE.

WSCIE and the Issue of Data Confidentiality

Data confidentiality is a complex theoretical and applied issue.[14] The WSCIE case provides an excellent illustration of both aspects of this problem on a local level. From the inception of WSCIE, its policy on data release was relatively simple yet stringent and seemed adequately to preclude data misuse by public and private agencies. In essence, this policy permitted only aggregated tabulations of the WSCIE data to be publicly available (the aggregations were never to be of less than four households or a census block, whichever was larger). Excluding the four principal funding agencies, any request for WSCIE data required the written authorization of the principally responsible elected official, the Sedgwick County Assessor. The aggregate tabulations by census tract (and in the case of age, sex, and race, by precinct) were made available for the use of the general public. In practice, the policy allowed the government agencies to fulfill their legitimate research needs while it protected the privacy of individuals by precluding the release of individual data.

In July of 1974, the campaign organization of a congressional candidate requested the WSCIE data files from the Assessor for campaign purposes: the organization wanted to match the name/address/age files of the WSCIE data against the data tapes of registered voters to develop effective voter registration drive targets. The Assessor refused the request on the grounds that it would violate the confidentiality assured the area residents; that this would be an illegitimate use of the data; and that by releasing the data files, individual information could be examined or otherwise misused. A state legislator then requested an opinion from the Kansas Attorney General as to the legality of the Assessor's refusal to release the data files. The Attorney General responded in mid-August:

> A computer tape, used to maintain records just as records were, in 1888 [Boyland v. Warren, 39 Kan. 301], maintained in books or ledgers, enjoys the same standing under this provision, to be subject to examination and copying. As the court stated then, there is no statute or good reason against it, and no sound reason either

in law or in policy, to distinguish computer tapes, now widely used for the maintenance of county and state records, from other and traditional modes of keeping county records, such as books and papers.

K.S.A. 45-201 states in pertinent part thus:

> "All official public records of the state [and] counties . . . , which records by law are required to be kept and maintained . . . shall at all times be open for a personal inspection by any citizen, and those in charge of such records shall not refuse this privilege to any citizen."

The term "records" includes any record, in whatever mode it is kept and maintained, including computer data tapes, when such tapes are so used. K.S.A. 45-202 assures, in addition to the right of access above, the right to make copies of public records. When, as is increasingly the case, a computer tape constitutes the primary record, from which all other lists and abstracts used in county business are derivative, that tape must be regarded as a record, and subject to the right of any interested person to make, necessarily at his own expense, a copy thereof, arrangements for which must be such as not to interfere with the proper conduct of the affairs of the county officer involved.[15]

Thus, Kansas' freedom of information law (K.S.A. 45-201) appeared to require the release of copies of the entire WSCIE data tapes.

At this point, an IRC member discovered (in informally attempting to mediate the conflict) that apparently none of the participants, except the Assessor, knew WSCIE tapes included substantial socioeconomic data. The IRC member was assured by those seeking the data, that only the name/address/age files were wanted, that the Attorney General's opinion only applied to that information required by law (name/address/age), and that legislation would be introduced in the next session of the legislature to specifically exclude the "other" data from the provisions of Kansas law. The Assessor continued to refuse to release the data on the grounds that he would be violating his oath of office and public trust, that it would "interfere with proper conduct of the affairs of" his elective office, and that the Attorney General's opinion applied to the entire WSCIE data. When these arguments were relayed to those seeking the data, it was indicated that

another Attorney General's opinion regarding "which data" were to be released would be sought. In the interim, the Assessor had written the Attorney General protesting the first opinion and setting forth his arguments. An additional Attorney General's opinion, which indirectly responds to the Assessor's letter, was forthcoming in late September 1974:

> . . . we considered [in the previous opinion] the application of this statute to computer tapes containing records of the annual enumeration made by the county assessor, concluding that those tapes were subject to this section.
>
> Since that time, it has come to public notice that in Sedgwick County, there is included on the tapes in question a great deal of information in addition to that which is required by the census statutes, K.S.A. 11-101 *et seq*. The suggestion has been made that the cited opinion to you required that all such information contained on the census tapes be subject to mandatory disclosure under K.S.A. 45-201. On page 2 of that opinion, after quoting from K.S.A. 45-201, I stated thus:
>
> "The term 'records' includes any record, in whatever mode it is kept and maintained, including computer data tapes. . . ."
>
> In this sentence, I spoke only of those records of information which are within the scope of K.S.A. 45-201, in other words, records of information which are required by law to be kept and maintained. Records of census data assembled pursuant to K.S.A. 11-101 *et seq*., are manifestly records of information required by law to be kept and maintained. If additional and other information is assembled and maintained in conjunction with census data, it is not subject to the same mandate of disclosure as the enumeration data assembled for the State Board of Agriculture.
>
> . . . In making available that information which is subject to mandatory public disclosures, the additional information gathered for and on behalf of these [IRC] agencies need not be made public.[16]

Thus, it appeared that K.S.A. 45-201 applied only to the name/address/age WSCIE files.

The Sedgwick County Assessor, however, continued to refuse to release the data on the basis that the second Attorney General's opinion did not exclude the release of the socioeconomic data. In restating his earlier arguments, the Assessor again argued that excising the socioeconomic data would interfere with the conduct of his office. Around the same time, the Board of County Commis-

sioners placed the issue on its agenda on the grounds that the County provided most of the WSCIE funding, directly or indirectly; in Kansas, the County Commissioners control the budgets of all elected county officials.

In what was to become an emotional and highly charged Board of County Commissioners meeting in October, 1974, the Assessor presented his case: to release the data would violate the confidentiality assured area residents and open the files up to anyone; the data were necessary to the conduct of local government affairs and the current IRC policy was adequate; and data access was his responsibility since he was charged by Kansas law (K.S.A. 11-101 *et seq.*) with gathering and maintaining the data.

IRC members also testified. Some members of the three-member Board of County Commissioners questioned whether any of the additional data (*i.e.*, that not required by statute, the name/address/age data), should be gathered, by arguing that WSCIE violated the privacy of area residents by gathering the data in the first place. Veiled threats were directed at the continuation of the WSCIE system and the Commissioners-Assessor exchanges often involved personal and emotional arguments. The result of this meeting was assurance of the Board of County Commissioners control over the data, and the release of the WSCIE name/address/age files. In addition, the Board of County Commissioners directed the County Counselor, their appointee, to work with the Director of Wichita-Sedgwick County Metropolitan Area Planning Department in developing a policy governing the use of WSCIE data.

As a result of this mandate, in December, 1974[17] the Board of County Commissioners received and approved a resolution which dealt with WSCIE data-release rules and procedures, utilization, collection, and the possession of the original computer tape files. The formal policy forbids the release, inspection, or utilization of any particular household's or individual's data except for the legally public name/age/address file, the animal maintenance census file, the preparation of jury lists by county jury commissioners and the computer processing of the original files.

The policy authorizes the creation of information summaries of the WSCIE data with no aggregations of less than four units of the item under consideration. Under the resolution, all requests for release or utilization of the data require the review and approval of the Director of the Wichita-Sedgwick County Metropolitan Area Planning Department (WSCMAPD) and the County Counselor or County Data Processing Director. In addition to serving as the WSCIE data repository, WSCMAPD is designated as the administrative agency for data requests/utilization and is required to provide quarterly reports on these matters to the Board of County Commissioners and the County Assessor. The data request form is specified by the policy and requires full information on the identity of the potential user, purpose of use, final disposition of the request, list of data elements supplied, level of aggregation, and format of the elements. Moreover, parties seeking the data must sign an agreement abiding by the resolution and agreeing not to sell or provide the data to another party (such users also may be required to provide WSCMAPD with a copy of their data for public use).

While the policy identifies, by reference, the approved public agencies and uses (IRC agencies and the uses displayed in Figure II) of the WSCIE data, it requires these agencies to adhere to the data-release procedures too. The resolution specifies that summary tabulations are to be kept, for public inspection, by the County Assessor, Center for Urban Studies of Wichita State University, Unified School District 259, and WSCMAPD. Without naming the IRC, the Board of County Commissioners' delegates to "representative agencies of Sedgwick County, City of Wichita and Unified School District 259" the determination of the data to be collected, collection procedures and data format. Since the Center for Urban Studies is partially funded by a local mill levy, it is one of the representative agencies. Finally, the policy designates WSCMAPD as Sedgwick County's agent for possessing the original computer tapes and forbids the possession of any copies thereof by other parties.

Since the policy formalizes previous practices with the one major exception that the Board of County Commissioners established

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it was in charge of the WSCIE data, the creation of the policy appears to reflect more the broad overtones of a political dispute within a particular jurisdiction than the issues of data access and control narrowly construed. To some extent this election year dispute may have been intensified by a long-standing pattern of conflict between the Board of County Commissioners and the state legislator who sought the original Attorney General's opinion with the County Assessor. Moreover, while all of these officials are elected within Sedgwick County, only the County Assessor is elected on a county-wide basis.

While the County remains a bastion of fragmented partisan political intrigues and a policy-administrative quagmire, the city of Wichita has an historical pattern of strong support for its council-manager form of government and separation of policy and professional administrative roles. In addition, since Wichita was not formally involved in the legal efforts, it had "no business" in the dispute. Nonetheless, some of the city's professional staff were involved (including those from WSCMAPD). Although traditionally there have been tensions between city and county elected officials, their respective employees do work together. It should be noted however, that employees of jointly funded operations such as WSCMAPD tend to identify more with the city than with the county. In part, this personal identification is a function of the professional administrative pattern of the city *vis-a-vis* the courthouse politics administrative pattern of the county. It should not be surprising then, that elected officials of the city of Wichita (and also those of Unified School District 259) were uninvolved in the dispute.[18]

With hindsight, it would appear that the original non-legal IRC data confidentiality policy was adequate, so long as the users were IRC members who were sensitive, professional researchers with a keen awareness of the problems of data confidentiality and possible data misuse. It reflected the mutual trust and ethical conduct assumed of professional researchers.

The basic weakness of the IRC policy appears to have been

its lack of "interperspective": it failed to fully consider the implications which could be drawn from the fact that a number of different public agencies and elected officials were directly or indirectly involved in the system. As a consequence, the policy was inadequate when placed in a broader context of public information, political dynamics and authority. The policy failed, for example, to consider the possibility that from among the heterogeneous elements of the system there would be conflicting conceptions of appropriate uses of the data and that one implication of such conflict would be the issue of "who decides what is confidential?". Thus, the basic inadequacy of the IRC policy appears to involve neither computer security nor the nature of the data to be collected but *naiveté* about the importance of political authority when it is manifested in issues such as data access and control.[19]

In the larger context of national activity in the area of data confidentiality and security the *modus vivendi* of the IRC and the Sedgwick County Board of County Commissioners may be questionable. In its study of federal data banks, for example, the U.S. Senate's Subcommittee on Constitutional Rights indicated that federal data banks should be required to have:

> explicit statutory authority for the creation of each data bank, as well as prior examination and legislative approval of all decisions to computerize files; privacy safeguards built into the increasingly computerized government files as they are developed, rather than merely attempting to supplement existing systems with privacy protections; notification of subjects that personal information about them is stored in a Federal data bank and provision of realistic opportunities for individual subjects to review and correct their own records; constraints on interagency exchange of personal data about individuals and the creation of interagency data bank cooperatives; the implementation of strict security precautions to protect the data banks and the information they contain from unauthorized or illegal access; continued legislative control over the purposes, contents and uses of government data systems.[20]

Since these requirements are written into the Privacy Act of 1974, it would appear that we are moving closer to uniform, federally

mandated data confidentiality and security regulations which may apply to all government data systems. The implications of the Privacy Act of 1974 are far-reaching, and should be taken into account by local data cooperatives such as the IRC.[21] Since it is not inconceivable that an economically justifiable, useful data system could be destroyed by the failure to conform to the principles promulgated above and elsewhere, it would appear imperative that urban administrators address themselves to these and other clearly defined rights and procedures as soon as possible.[22] These principles will affect, perhaps more than any other factors, the existence and success of locally implemented data systems.

Summary

Both the IRC and WSCIE serve an integrating function to research activities in the Wichita-Sedgwick County area. To some extent, they have brought about a realignment of public and private agencies through growing reliance on the data system and increased participation in the IRC. Once atomized data-gathering agencies are now working together in their organization to develop and continue a mutually beneficial and responsive data system. At the same time, the dynamic nature of the system provides opportunities for individuals and organizations to increase their own sophistication. The increments evidenced in the IRC and WSCIE undoubtedly will result in further community benefits. While the data are used extensively for analytical planning and development purposes, it is expected that an increasing number of agencies will use the data for evaluational and decision-making purposes in the future, following the pattern established by WSCMAPD since WSCIE's inception.

As Stallings points out, data access and control may be based on a system of information categories and centralized authority. While the IRC policy included decision-making guidelines as well as an organizational framework for making decisions, the system did not anticipate the effects of dynamic inter- and intra-governmental conflicts over "who rules." An independent authority,

such as Stallings suggests, may resolve the problem in a single jurisdiction area. However, most urban areas contain a variety of jealously independent units of government and elected officials. Thus it may be extremely difficult to develop a recognized, independent authority to deal with data access and control--although, in this case, the problem did not originate out of local jealousies and/or conflicts. The issues surfaced when the question of power arose. Regardless of an authority's structure, this case indicates that a centralized authority is essential.

Given the WSCIE experience, it appears that administrators considering the development of an urban information system should weigh carefully the theoretical and applied issues. From the outset, key elected officials, citizens, and legal consultants should be involved to ensure that potentially explosive and destructive issues such as data access, control, and authority are satisfactorily resolved prior to the system's implementation. Since a data confidentiality policy is no more authoritative than its source, it may be the better part of administrative wisdom to develop a stringent, simple operational policy initially. Subsequently, as events require (and they probably will), it may be modified. Professional research ethics, trust, and practices may not be convincing to professional politicians, nor should they be substituted for clear, legally delineated policies where public interests are involved.

NOTES

1. *Cf.*, Edward C. Banfield, The Unheavenly City Revisited (Boston: Little, Brown, and Company, 1974), pp. 287-290.

2. Kenneth L. Kraemer, "The Evolution of Information Systems for Urban Administration," Public Administration Review, Vol. XXIX (July/August, 1969), p. 394.

3. *E.g.*, Ludwig Von Bertalanffy, General System Theory (New York: George Braziller, 1968); Walter Buckley, ed., Modern Systems Research for the Behavioral Scientist (Chicago: Aldine Publishing Company, 1968); Wyndham Clarke and William Besuden, eds., Applying Systems Analysis in Urban Government: Three Case Studies (Washington, D.C.: International City Management Association, 1974); Kenneth J. Dueker, "Urban Information Systems and Urban Indicators," Urban Affairs Quarterly, Vol. VI (December, 1970), pp. 173-178; David Easton, The Political System (New York: Alfred A. Knopf, 1966); Donald M. Fisk and Richard E. Winnie, "Output Measurement in Urban Government: Current Status and Likely Prospects," Social Science Quarterly Vol. LIV (March, 1974), pp. 725-740; Jay W. Forrester, Urban Dynamics (Cambridge: The M.I.T. Press, 1969); Kenneth L. Kraemer, "USAC: An Evolving Intergovernmental Mechanism for Urban Information Systems Development," Public Administration Review, Vol. XXXI (September/October, 1971), pp. 543-551; Kenneth L. Kraemer, Policy Analysis in Local Government (Washington, D.C.: International City Management Association, 1973; "Symposium on Computers in Public Administration," Public Administration Review, Vol. XXVIII (November/December, 1968); and, "Urban Development Information System: Fairfax County, Virginia," Research, Vol. II (May, 1974), p. 5.

4. In this intergovernmental system, the computer equipment and programs are as varied as the number of participants. The basic language for the Wichita-Sedgwick County Intergovernmental Enumeration (WSCIE) data tapes is COBOL. For more technical discussions, see, Randolf A. Gschwind, "The Intergovernmental Enumeration, Wichita-Sedgwick County, Kansas, 1971-73," Research in Metropolitan Change and Conflict Resolution, working paper No. 2 (Philadelphia: Peace Science Department, University of Pennsylvania, November, 1973); Eric G. Moore, Willard L. Stockwell, Stephen Gale and Randolf A. Gschwind, "The Role of Micro-Level Data Systems in the Urban Planning Process: A Comment and a Case Study," paper presented at the Fourth European Symposium on Urban Data Management, Madrid, April 16-19, 1974; and, Sedgwick County Annual

Enumeration and Socio-Economic Survey, 1969-1974, A report prepared by Langston, Kitch and Associates, Inc. for the Department of Community Development, CDA Office of Research and Evaluation, Wichita, Kansas (September, 1974).

5. The 1970 U.S. Census placed Wichita's population at 276,554. However, over the next few years, it suffered a population decline which appears to have stopped in 1974, when, according to WSCIE data, the population was 261,851. Since then, the city's population has grown slightly (allowing for annexation) to its present size of 265,455 residents. *Cf.*, Census Tracts Wichita, Kansas, SMSA, PHC(1)-231, U.S. Department of Commerce (Washington: U.S. Government Printing Office, 1970); also, Government Organizations: 1972 Census of Governments, U.S. Department of Commerce (Washington: U.S. Government Printing Office, 1972), *passim*; Statistical Abstract of the United States, 1973, U.S. Department of Commerce (Washington: U.S. Government Printing Office, 1973), pp. 14-15, 22-25.

6. "Policy Statement for the Intergovernmental Research Committee," (Revised, January 1974), p. 1. (IRC Secretariat Files, Center for Urban Studies, Wichita State University.)

7. *Ibid.*

8. Unpublished memo from Coalition Planning Board to the members of U.S.D. 259 Board of Education, Board of Sedgwick County Commissioners, and Board of Wichita City Commissioners, February 2, 1972. (IRC Secretariat Files, Center for Urban Studies, Wichita State University.)

9. *Op. cit.* Gschwind, "The Intergovernmental Enumeration, Wichita-Sedgwick County, Kansas, 1971-1973," p. 1.

10. With the adoption of the new data confidentiality policy by the Sedgwick County Board of Commissioners in December, 1974, the symbolism itself became governmental policy. See discussion of the issue of data confidentiality and the policy in the text.

11. Richard S. Hanel, "Management, Systems Analysis and Urban Data," in Applying Systems Analysis in Urban Government: Three Case Studies, *op. cit.*, pp. 7-8. (Appendix D.)

12. See, Charles Myers and Jack McKinney, Census Tract Ranking by Socio-Economic Indicators (Wichita: Department of Community Development, CDA Office of Research and Evaluation, September, 1974); and, James Williams, "An Analysis in Reference to Modified Live Virus Vaccines," (Wichita-Sedgwick County Department of Community Health, Division of Environmental Health, July, 1974), unpublished. In a Parkinsonian fashion, data usage appears to expand with its availability.

13. *Cf.*, P. Sargant Florence, The Logic of British and American Industry (London: Routledge and Kegan Paul, 1972), pp. 52-57; Thomas J. Mikulecky, ed., Human Services Integration (Washington: American Society for Public Administration, March, 1974).

14. *E.g.*, C. Wayne Stallings, "Local Information Policy: Confidentiality and Public Access," Public Administration Review, Vol. XXXIV (May/June, 1974), pp. 197-204; and U.S. Congress, Senate, Subcommittee on Constitutional Rights, Committee on the Judiciary, Federal Data Banks and Constitutional Rights Vol. 1, 93d Congress, 2nd session, 1974; Records, Computers and the Rights of Citizens, Report of Secretary's Advisory Committee on Automated Personal Data Systems, U.S. Department of Housing, Education and Welfare (Cambridge: The M.I.T. Press, 1973); Alan F. Westin and Michael A. Baker, Databanks in a Free Society (New York: Quadrangle Books, 1972); Edward M. Goldberg, "Urban Information Systems and Invasions of Privacy," Urban Affairs Quarterly, Vol. V (March, 1970), pp. 249-264; and, Albert Mindlin, "Confidentiality and Local Information Systems," Public Administration Review, Vol. XXVIII (November/December, 1968), pp. 509-518.

15. Opinion Number 74-281, State of Kansas, Office of the Attorney General, August 16, 1974. (IRC Secretariat Files, Center for Urban Studies, Wichita State University.)

16. Opinion Number 74-324, State of Kansas, Office of the Attorney General, September 23, 1974. (IRC Secretariat Files, Center for Urban Studies, Wichita State University.)

17. Resolution passed, December 19, 1974, by the Board of County Commissioners of Sedgwick County, Kansas (IRC Secretariat Files, Center for Urban Studies, Wichita State University.)

18. See, Richard E. Zody, "The Politics of Decision Making: Impact on the Wichita Area," in Metropolitan Wichita, Glen W. Miller and Jimmy M. Skaggs, eds., (Lawrence, Kansas: University Press of Kansas), forthcoming.

19. The existing literature has not made a clear distinction between the issues of data access and control. For example, a decision may be made which permits Agency X to copy the WSCIE files with the names exorcised. Once that decision is made, the decision-maker, "loses control" to some extent, of the data use. The issues are not only technical and administrative in nature but also political, social, and economic. To the authors' knowledge, no one has fully explored the ramifications of these facets of data access and control, although Stallings ("Local Information Policy: Confidentiality and Public Access", *op. cit.*) has made an excellent beginning.

20. Federal Data Banks and Constitutional Rights, *op. cit.*, pp. iv-v.

21. *Cf.*, U.S. Congress, An Act to Amend Title 5, United States Code, Pub. L. 93-579, 93rd Congress, 2nd Session, 1974, S.3418.

22. See particularly, Stallings, "Local Information Policy: Confidentiality and Public Access", *op. cit.*; and, Westin and Baker, Databanks in a Free Society, *op. cit.*, pp. 341-405.

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